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COUNTRY ANALYSIS BRIEFS

South China Sea

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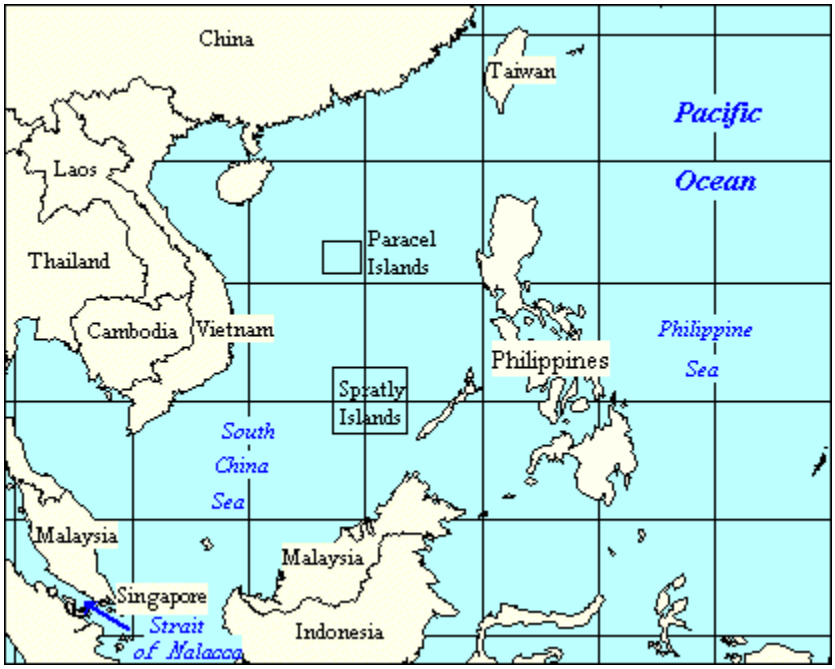
Background

The South China Sea is rich in natural resources such as oil and natural gas.

The South China Sea encompasses a portion of the Pacific Ocean stretching roughly from Singapore and the Strait of Malacca in the southwest, to the Strait of Taiwan (between Taiwan and China) in the northeast (see the footnote for a more precise definition). The area includes more than 200 small islands, rocks, and reefs, with the majority located in the Paracel and Spratly Island chains. Many of these islands are partially submerged islets, rocks, and reefs that are little more than shipping hazards not suitable for habitation; the total land area of the Spratly Islands is less than 3 square miles. The islands are important, however, for strategic and political reasons, because ownership claims to them are used to bolster claims to the surrounding sea and its resources.



The South China Sea is rich in natural resources such as oil and natural gas. These resources have garnered attention throughout the Asia-Pacific region. Asia's economic growth rates have been among the highest in the world, and this economic growth will be accompanied by an increasing demand for energy. Between now and 2025, oil consumption in developing Asian countries is expected to rise by 3.0 percent annually on average, with more than one-third of this increase coming from China alone. If this growth rate is maintained, oil demand for these nations will increase from about 15.1 million barrels per day in 2002 to nearly 33.6 million barrels per day by 2025.

Much of this additional demand will need to be imported from the Middle East and Africa. Excluding cargoes bound for South Asia, most of this volume would need to pass through the strategic Strait of Malacca into the South China Sea (see Figure 1). Countries in the Asia-Pacific region depend on seaborne trade to fuel their economic growth, and this has led to the sea's transformation into one of the world's busiest shipping lanes. Over half of the world's merchant fleet (by tonnage) sails through the South China Sea every year. The economic potential and geopolitical importance of the South China Sea region has resulted in jockeying between the surrounding nations to claim this sea and its resources for themselves.

South China Sea Territorial Issues

Ownership of

virtually all of the South China Sea remains contested, and the disputed areas often involve oil and natural gas resources.

Competing territorial claims over the South China Sea and its resources are numerous, with claims for various areas by China, Taiwan, the Philippines, Vietnam, Indonesia, Malaysia, Brunei, Cambodia, and Thailand. In March 2005, a memorandum of understanding was signed by China, the Philippines, and Vietnam to resolve the energy exploration issues among the three countries in the South China Sea. The countries agreed to do seismic surveys in the area which includes the SpratlyIslands, without giving up their respective territorial claims. The Philippine National Oil Company, China National Offshore Oil Corporation and PetroVietnam agreed to design seismic oil exploration for a 3-year program covering a 55,000 square mile area. The three companies are sharing the $15 million project cost. The Chinese seismic vessel Nanhal is gathering the data. The seismic data is sent to Vietnam for processing. Then the data is being analyzed by experts in the Philippines.

Ownership of virtually all of the South China Sea remains contested. The disputed areas often involve oil and natural gas resources:

- Indonesia's ownership of the natural gas-rich fields offshore of the Natuna Islands was undisputed until China released an official map with unclear maritime boundaries indicating that Chinese-claimed waters in the South China Sea may extend into the waters around the Natuna Islands. Indonesia responded, in 1996, by holding large military exercises in the Natuna Islands region. Since then, Indonesia has done major natural gas production in the Natuna area and China has not voiced any objection. The three blocks in the Natuna area are estimated to contain about 5 Tcf of recoverable gas. Indonesia has been exporting Natuna gas to Singapore's Jurong island via a 400-mile undersea pipeline since 2001.
- The Philippines' Malampaya and Camago natural gas and condensate fields are in Chinese-claimed waters. The fields are estimated to contain 2.6 Tcf of natural gas. The Philippines has proceeded with development of the fields and linked the gas output to three power plants via a 312-mile pipeline. There have been no objections from China to this development.
- Many of Malaysia's natural gas fields located offshore Sarawak also fall under the Chinese claim, but as with the Philippine gas fields, China has not specifically objected to their development. In July 2002, a new oil discovery by Murphy Oil (working under a contruct with state-owned Petronas) about 100 miles offshore from Sabah on island of Borneo rekindled interest in a latent dispute between Malaysia and Brunei over offshore rights. Murphy plans to begin commercial production in the area in 2007. Shell Malaysia reported a deep water oil discovery off the Sabah coast in 2004. Brunei had asserted a 200-mile exclusive economic zone (EEZ) off its coastline in 2000. Negotiations between the two governments to resolve the issue are continuing.
- Vietnam and China have resolved their dispute over areas in the Gulf of Tonkin to the south of China's Guangdong province. An agreement signed in December 2000 delineated the boundary between their EEZs, opening the way for oil and gas exploration.
- Maritime boundaries in the natural gas-rich Gulf of Thailand portion of the South China Sea have not all been clearly defined. Several companies have signed exploration agreements but have been unable to drill in a disputed zone between Cambodia and Thailand. Overlapping claims between Thailand and Vietnam were settled on August 8, 1997, and cooperative agreements for exploration and development were signed for the Malaysia-Thai and Malaysia-Vietnam Joint Development Areas (the latter effective June 4, 1993).

Most of these claims are historical, but they are also based upon internationally accepted principles extending territorial claims offshore onto a country's continental shelf, as well as the 1982 United Nations Convention on the Law of the Sea.

UN Law of the Sea

The United Nations Law of the Sea has helped in resolving ownership disputes in the South China Sea.

The 1982 convention created a number of guidelines concerning the status of islands, the continental shelf, enclosed seas, and territorial limits. Among the most relevant to the South China Sea are:

1. Article 3, which establishes that "every state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles";
2. Articles 55 - 75 define the concept of an Exclusive Economic Zone (EEZ), which is an area up to 200 nautical miles beyond and adjacent to the territorial sea. The EEZ gives coastal states "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to" (above) "the seabed and of the seabed and its subsoil...".
3. Articles 76 defines the continental shelf of a nation, which "comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of

its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles...". This is important because Article 77 allows every nation to exercise "over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources".

4. Article 121, which states that rocks that cannot sustain human habitation or economic life of their own shall have no exclusive economic zone or continental shelf.

The establishment of the EEZ created the potential for overlapping claims in semi-enclosed seas such as the South China Sea. These claims could be extended by any nation which could establish a settlement on the islands in the region. South China Sea claimants have established outposts on the islands (mostly military) in order to conform with Article 121 in pressing their claims. The Law of the Sea Convention states that countries with overlapping claims must resolve them by good faith negotiation. The use of the Joint Development Area principle, followed in the Gulf of Thailand, is one model that has been successfully used by South China Sea claimants.

Regional Conflict and Resolution

Island disputes and military skirmishes have plagued the South China Sea, but resolution efforts are underway.

All of the Spratly Islands claimants have occupied some of the islands, and/or stationed troops and built fortified structures on the reefs. Brunei, which does not claim any of the Spratly Islands, has not occupied any of them, but has declared an Exclusive Economic Zone that includes Louisa Reef.

Military skirmishes have occurred numerous times over the past two decades. The most serious occurred in 1974, when China invaded and captured the Paracel Islands from Vietnam, and in 1988, when the Chinese and Vietnamese navies clashed at Johnson Reef in the Spratly Islands, sinking several Vietnamese boats and killing over 70 sailors.

Indonesia has taken the leading role in diplomatic initiatives and cooperative agreements to resolve South China Sea issues, particularly through the ASEAN (Association of Southeast Asian Nations) forum, which has called for the peaceful arbitration of territorial claims. ASEAN includes all South China Sea nations except for China and Taiwan, and has held a number of working groups with China and Taiwan on related issues that have the potential to foster the cooperation and friendship needed to resolve the more contentious issues in the region. Indonesia hosted the first of these workshops in 1990. These issues have also been discussed at the larger ASEAN Regional Forum (ARF), held in conjunction with the ASEAN Post Ministerial Conference, which draws together 22 countries which are involved in the security of the Asia Pacific region, including all ASEAN members.

ASEAN ministers agreed in 1996 that there should be a regional code of conduct for the South China Sea to permit activities such as scientific research and efforts to combat piracy and drug trafficking without invoking the contentious issue of sovereignty. At the ASEAN Summit in November 1999, ASEAN members put forth a general code of conduct for resolving disputes which had been drafted by the Philippines and Vietnam.

Any such agreements would need to involve non-ASEAN members such as China and Taiwan in order to be comprehensive. China, which is a member of the ARF, has argued in the past that the resolution of territorial disputes should be a bilateral issue. However, other ARF members, such as the United States, have argued that all ARF members had an interest in issues affecting the peace and stability of the region, and that the ARF forum was appropriate for discussing these issues. Views on this issue are varied:

- China has begun a dialogue with ASEAN on the idea of a "code of conduct" governing actions by claimants, but progress has been slow. In general, ASEAN members have pushed for specific committments to refrain from additional occupation of reefs or new construction, which China has favored a more vague committment to refrain from actions which would "complicate the situation." In November 2002, China and the 10 members of ASEAN signed a Joint Declaration on the Conduct of the Parties, which pledged to "undertake to resolve their territorial and jurisdictional disputes by peaceful means" without "resorting to the threat or use of force."
- Malaysian Foreign Minister Syed Hamid bin Syed Jaafar Albar stated that it was his belief that ASEAN nations had agreed that the territorial disputes were an ASEAN issue, and should not be resolved in other international forums.
- Vietnam has held bilateral group mettings with China to resolve disputed boundaries in the Gulf of Tonkin (referred to as the Beibu Wan by China, the Vinh Bac Bo by Vietnam) and the Spratlys, as well as land boundaries. The Gulf of Tonkin dispute was resolved in an agreement concluded in December 2000. Vietnam has wanted to include the dispute over the Paracel

Islands in any "code of conduct," but the idea is not supported by other ASEAN members because the Paracels are disputed only between Vietnam and China.

- Malaysia and Brunei have held talks in 2003 on their conflicting EEZ claims, but have not yet reached an agreement. There have been incidents in 2003 in which naval vessels from Malaysia and Brunei have acted (without the actual use of force) to prevent exploration vessels from working in the disputed area.

Oil

Most of the attention that is placed on resources in the South China Sea have to do with oil.

The focus of most attention regarding the South China Sea's resources has been on hydrocarbons in general, and on oil in particular. Oil deposits have been found in most of the littoral (adjacent) countries of the South China Sea. The South China Sea region has proven oil reserves estimated at about 7.0 billion barrels, and estimated oil production of around 2.5 million barrels per day. Malaysian production accounts for almost one-half of the region's total. South China Sea production has increased gradually over the past few years, primarily as additional production from China, Malaysia and Vietnam has come online.

The fact that surrounding areas are rich in oil deposits has led to speculation that the Spratly Islands could be an untapped oil-bearing province located near some of the world's largest future energy consuming countries. Speculation that the Spratly Islands could have great strategic value has fueled disputes over ownership. In fact, there is little evidence outside of Chinese claims to support the view that the region contains extensive oil resources. Because of a lack of exploratory drilling, there are no proven oil reserve estimates for the Spratly or Paracel Islands, and no commercial oil or gas has been discovered there.

Resource estimates for the South China Sea region that have been reported in the Chinese press or attributed to Chinese officials vary greatly. Optimistic Chinese estimates of the South China Sea region's oil potential, however, have helped encourage interest in the area, with one report suggesting that the Spratly Islands region could become another Persian Gulf. One of the more moderate Chinese estimates suggested that potential oil resources (not proved reserves) of the Spratly and Paracel Islands could be as high as 105 billion barrels of oil, and another suggested that the total for the South China Sea could be as high as 213 billion barrels. A common rule-of-thumb for such frontier areas as the Spratly Islands is that perhaps 10 percent of the potential resources can be economically recovered. Using this rule, these Chinese estimates imply potential production levels for the Spratly Islands of 1.4-1.9 million barrels per day (at reserve/production ratios of 15 and 20). The highest Chinese reserves estimate implies production levels that are twice as high as this.

China's optimistic view of the South China Sea's hydrocarbon potential is not shared by most non-Chinese analysts. A 1993/1994 estimate by the U.S. Geological Survey, for example, estimated the sum total of discovered reserves and undiscovered resources in the offshore basins of the South China Sea at 28 billion barrels. Using the same rule-of-thumb, these reserves could yield a peak oil production level for the Spratly Islands of 137,000-183,000 barrels per day, the same order of magnitude as current production levels in Brunei or Vietnam.

Natural Gas

Although natural gas is sometimes overlooked, it could be the most abundant hydrocarbon resource in the South China Sea.

Though sometimes overlooked, natural gas might be the most abundant hydrocarbon resource in the South China Sea. Most of the hydrocarbon fields explored in the South China Sea regions of Brunei, Indonesia, Malaysia, Thailand, Vietnam, and the Philippines contain natural gas, not oil. Estimates by the U.S. Geological Survey and others indicate that about 60 to 70 percent of the region's hydrocarbon resources are natural gas.

At the same time, natural gas usage among developing Asian countries is expected to rise by about 4.5 percent annually on average through 2025 -- faster than any other fuel -- with almost half of this increase coming from China. If this growth rate is maintained, demand will exceed 21 trillion cubic feet (Tcf) per year - nearly triple current consumption levels -- by 2025. Natural gas consumption could increase even faster if additional infrastructure is built. Proposals have been made to link the gas producing and consuming regions of the Pacific Rim region of Asia by pipeline, with the South China Sea geographically central to these regions.

Malaysia is not only the biggest oil producer in the region, it is also the dominant natural gas producer as well, and until recently has been the primary source of growth in regional gas production. The development of natural gas resources outside of Malaysia has been hampered by the lack of infrastructure. Despite this constraint, natural gas exploration activity elsewhere in the

region has been increasing. Much of this new activity had occurred in the Gulf of Thailand, offshore China, in Indonesia around the Natuna Islands, and in Vietnam in the Nam Con Son basin southeast of Vietnam.

As with oil, estimates of the South China Sea's natural gas resources vary widely. One Chinese report estimates that there are 225 billion barrels oil equivalent of hydrocarbons in the Spratly Islands alone. If 70 percent of these hydrocarbons are gas as some studies suggest, total gas resources (as opposed to proved reserves) would be almost 900 Tcf. If the rule of thumb for frontier areas were applied to these resource levels, the Chinese estimates would imply potential production levels for the Spratly Islands of almost 1.8-2.2 Tcf annually (at common natural gas reserve/production ratios in the region of 40-50). The entire South China Sea has been estimated by the Chinese to contain more than 2,000 Tcf of natural gas resources. As with oil, China's optimistic view of the South China Sea's natural gas potential is not shared by most non-Chinese analysts.

The bulk of the world's LNG trade passes through the South China Sea, and LNG shipments through the Sea to Northeast Asian Markets constituted well over half of the world's LNG trade in 2001. Japan is by far the world's largest consumer of LNG, with shipments to South Korea (the world's second largest consumer of LNG) and Taiwan (the world's fifth largest consumer of LNG) accounting for most of the remaining shipments through the Sea.

Shipping

A large percentage of the world's annual merchant fleet passes through the Straits of Malacca, Sunda and Lombok and continues into the South China Sea.

More than half of the world's annual merchant fleet tonnage passes through the Straits of Malacca, Sunda, and Lombok, with the majority continuing on into the South China Sea (see map). Oil flows through the Straits of Malacca leading into the South China Sea are three times greater than through the Suez Canal/Sumed Pipeline, and fifteen times greater than oil flows through the Panama Canal. Virtually all shipping that passes through the Malacca and Sunda Straits must pass near the Spratly Islands. The other major shipping lane in the region uses the Lombok and Makassar Straits, and continues into the Philippine Sea. Except for north-south traffic from Australia, the Philippine Sea is not used as extensively as the Strait of Malacca and the South China Sea, since for most voyages the Philippine Sea represents a longer voyage by several hundred miles.

Shipping (by tonnage) in the South China Sea is dominated by raw materials en route to East Asian countries. Tonnage via Malacca and the Spratly Islands is dominated by liquid bulk such as crude oil and liquefied natural gas (LNG), with dry bulk (mostly coal and iron ore) in second place. Nearly two-thirds of the tonnage passing through the Straits of Malacca, and half of the volume passing through the Spratly Islands, is crude oil from the Persian Gulf. Oil flows through the Straits of Malacca were 10.3 million barrels per day in 2002, and rising Asian oil demand could almost double these flows over the next two decades.

Northeast Asian nations are heavily dependent upon energy shipments through the South China Sea. More than 80 percent of the crude oil supplies for Japan, South Korea, and Taiwan flow through the Sea from the Middle East, Africa, and South China Sea nations such as Indonesia and Malaysia. LNG (above) and coal from Indonesia, South Africa, and Vietnam are also shipped via this route. As a result, about two-thirds of South Korean energy supplies, and almost 60 percent of Japan and Taiwan's energy supplies flow through the Sea.

Links

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CIA World Factbook - Spratly Islands
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National Defense University, Institute for National Strategic Studies - Southeast Asian Chokepoints
Sandia National Laboratory - Keeping an Eye on the Islands: Remote Monitoring in the South China Sea
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